AMENDMENTS TO THE CLAIMS

The claims in this listing will replace all prior versions, and listings, of claims in the application.

Claims 1-11. (Canceled)

12. (New) A transmitting apparatus comprising:

a coder configured to encode transmitting data;

a processor configured to divide the data encoded by the coder into first data and second data, the first data comprising data that is demodulated as decoding data by a receiving apparatus that decodes received data, the second data comprising data that is output with the first data as said decoding data by the receiving apparatus upon fulfillment of a predetermined condition; and

a transmitter configured to transmit the first data and the second data.

13. (New) The transmitting apparatus according to claim 12, wherein the processor performs puncture processing of the first data by removing the second data from the encoded data according to a predetermined rule.

14. (New) The transmitting apparatus according to claim 13, wherein a puncture rate of the puncture processing by the processor and a modulation scheme used for transmitting the second data are adaptively switched and controlled according to a quality of a channel used for transmitting the second data.

15. (New) The transmitting apparatus according to claim 12, wherein the second data is transmitted with the first data.

16. (New) The transmitting apparatus according to claim 12, wherein the predetermined condition comprises an error occurrence in the received encoded data.

17. (New) The transmitting apparatus according to claim 12, wherein the second data is transmitted from the transmitter upon fulfillment of the predetermined condition.

18. (New) The transmitting apparatus according to claim 12, wherein the second data is transmitted when traffic is not occupying channels the transmitter uses for transmission.

19. (New) The transmitting apparatus according to claim 12, further comprising a received quality information extractor configured to extract quality information of a signal that is received by the receiving apparatus,

wherein the second data is transmitted by the transmitter according to the quality information extracted by the received quality information extractor.

20. (New) The transmitting apparatus according to claim 19, wherein:

the received quality information extractor is configured to extract average received signal strength information for each section of the data received by the receiving apparatus; and

a section of data for which an average received signal strength information is weakest, among average received signal strength information of the data extracted by the received quality information extractor, is transmitted by the transmitter as the second data.

21. (New) The transmitting apparatus according to claim 19, wherein:

the received quality information extractor is configured to extract a carrier to noise ratio for each section of the data received by the receiving apparatus; and

a section of data for which the carrier to noise ratio is lowest, among carrier to noise ratios of the data extracted by the received quality information extractor, is transmitted as the second data.

22. The transmitting apparatus according to claim 19, wherein:

the received quality information extractor is configured to extract likelihood information based on soft decision values for each section of the data received by the receiving apparatus; and

a section of data for which the likelihood information based on soft decision values is lowest, among the likelihood information based upon soft decision values extracted by the received quality information extractor, is transmitted as the second data.

23. (New) The transmitting apparatus according to claim 12, wherein the first data is transmitted by the transmitter in a main burst and the second data is transmitted by the transmitter in a sub burst that is different from the main burst.

24. (New) The transmitting apparatus according to claim 12, wherein a modulation scheme applied to the first data and a modulation scheme applied to the second data are different.

25. (New) A transmitting apparatus comprising:

a coder that encodes transmitting data;

a partial retransmission processor that extracts predetermined data from the data encoded by the coder, the predetermined data comprising a portion of data that is output as decoding data from a receiving apparatus that decodes received data upon fulfillment of a predetermined condition; and

a transmitter that transmits the predetermined data.

26. (New) The transmitting apparatus according to claim 25, wherein the predetermined condition comprises an error occurrence in the received encoded data.

27. (New) The transmitting apparatus according to claim 25, further comprising a received quality information extractor configured to extract quality information of a received signal that is received by the receiving apparatus,

wherein the predetermined data is transmitted from the transmitter to the receiver according to the quality information extracted by the received quality information extractor.

28. (New) The transmitting apparatus according to claim 27, wherein the received quality information extractor is configured to extract average received signal strength information for each section of the data received by the receiving apparatus; and

a section of data for which an average received signal strength information is weakest, among average received signal strength information of the data extracted by the received quality information extractor, is transmitted by the transmitter as the predetermined data.

29. (New) The transmitting apparatus according to claim 27, wherein the received quality information extractor is configured to extract a carrier to noise ratio for each section of the data received by the receiving apparatus; and

a section of data for which the carrier to noise ratio is lowest, among carrier to noise ratios of the data extracted by the received quality information extractor, is transmitted as the predetermined data.

30. (New) The transmitting apparatus according to claim 27, wherein:

the received quality information extractor is configured to extract likelihood information based on soft decision values for each section of the data received by the receiving apparatus; and

a section of data for which the likelihood information based on soft decision values is lowest, among the likelihood information based on soft decision values extracted by the received quality information extractor, is transmitted as the predetermined data.

31. (New) The transmitting apparatus according to claim 25, wherein data assigned to a bit that is sensitive to noise is transmitted as the predetermined data.

32. (New) The transmitting apparatus according to claim 25, wherein the predetermined data is transmitted from the transmitter in a burst structure.

33. (New) A transmitting apparatus comprising:

a modulator configured to modulate transmitting data;

a memory configured to store predetermined data, the predetermined data comprising data modulated by the modulator and output as demodulated data by a receiving apparatus that demodulates received data;

a partial retransmission processor configured to extract data from the predetermined data, the extracted data comprising a portion of data that is output with the predetermined data as said demodulated data by the receiving apparatus upon fulfillment of a predetermined condition; and

a transmitter that transmits the predetermined data and the extracted data.

34. (New) The transmitting apparatus according to claim 33, wherein the predetermined condition comprises an error occurrence in the demodulated data.

35. (New) The transmitting apparatus according to claim 33, further comprising a received quality information extractor that extracts quality information of a received signal that is received by the receiving apparatus,

wherein the extracted data is transmitted by the transmitter according to the quality information extracted by the received quality information extractor.

36. (New) The transmitting apparatus according to claim 35, wherein:

the received quality information extractor is configured to extract average received signal strength information for each section of the data received by the receiving apparatus; and

a section of data for which an average received signal strength information is weakest, among average received signal strength information of the data extracted by the received quality information extractor, is transmitted from the transmitter as the extracted data.

37. (New) The transmitting apparatus according to claim 35, wherein:

the received quality information extractor is configured to extract a carrier to noise ratio for each section of the data received by the receiving apparatus; and

a section of data for which the carrier to noise ratio is lowest, among carrier to noise ratios of the data extracted by the received quality information extractor, is transmitted as the extracted data.

38. (New) The transmitting apparatus according to claim 35, wherein:

the received quality information extractor is configured to extract likelihood information based on soft decision values for each section of the data received by the receiving apparatus; and

a section of data for which the likelihood information based on soft decision values is lowest, among the likelihood information based on soft decision values extracted by the received quality information extractor, is transmitted as the extracted data.

39. (New) The transmitting apparatus according to claim 33, wherein data assigned to a bit that is sensitive to noise is transmitted as the extracted data.

40. (New) The transmitting apparatus according to claim 33, wherein the transmitter transmits the predetermined data in a frequency hopping scheme.

41. (New) The transmitting apparatus according to claim 33, wherein:

the predetermined data is transmitted by the transmitter in a main burst and the extracted data is transmitted by a transmitter in a sub burst that is different from the main burst.

42. (New) The transmitting apparatus according to claim 33, wherein a modulation scheme applied to the predetermined data and a modulation scheme applied to the extracted data are different.

43. (New) A receiving apparatus comprising:

a receiver configured to receive predetermined data and other data, the predetermined data being transmitted in a main burst structure, the other data being transmitted in a sub burst structure that is different from the main burst structure;

a channel decoder configured to detect whether or not data received by the receiver contains an error, by decoding the data received by the receiver; and

a reception success judger configured to determine whether or not to output the predetermined data and the other data decoded by the channel decoder as decoding data based on an error detection result of the predetermined data.

44. (New) The receiving apparatus according to claim 43, further comprising a combining processor configured to combine the predetermined data and the other data based on a determination result of the reception success judger.

45. (New) The receiving apparatus according to claim 44, wherein:

the predetermined data decoded by the channel decoder is output as the decoding data based upon a determination by the reception success judger upon output of the predetermined data decoded by the channel decoder; and

the predetermined data and the other data, prior to the combining by the combining processor, are decoded by the channel decoder and output as the decoded data, based upon a determination by the reception success judger upon decoding and output of the predetermined data and the other data as received by the receiver.

46. (New) The receiving apparatus according to claim 43, further comprising a partial received quality estimator configured to estimate average received signal strength information for each section of the received data,

wherein a section of data for which an average received signal strength information is weakest, among average received signal strength information of the data estimated by the partial received quality estimator, is received as the other data.

47. (New) A transmitting apparatus comprising:

a modulator that M-ary modulates transmitting data;

a partial retransmission processor that extracts data from the transmitting data M-ary modulated by the modulator, the extracted data comprising a portion of data that is used with the transmitting data in demodulation processing in a receiving apparatus that receives an M-ary modulated signal when the transmitting data contains an error; and

a transmitter that transmits the extracted data.

48. (New) A transmitting apparatus comprising:

a coder that encodes transmitting data;

a processor that divides the data encoded by the coder into first divided data and second divided data, the first divided data comprising data used in decoding processing in a receiving apparatus that decodes received data, the second divided data comprising data used with the first divided data in the decoding processing in the receiving apparatus when the encoded data contains an error; and

a transmitter that transmits the first divided data and the second divided data.